

Appendix E — Performance Measurement Linkages

I. Approach to Performance Measurement

CDC and partners are concerned with a spectrum of health issues, including infectious diseases, chronic conditions, adverse reproductive outcomes, environmentally related conditions, occupationally related health events, and injuries. This array of health conditions and outcomes requires a variety of intervention strategies for populations, in addition to clinical preventive services for individuals. CDC engages in extensive dialogue with partners, communities, and the public to identify and implement intervention strategies that address the specific needs of diverse populations. Examples include the provision of prophylactic measures (e.g., vaccination, post-exposure prophylaxis), educational services (e.g., dissemination of public health messages, counseling), inspection of food establishments, and control of disease outbreaks. For these activities, the rational development of public health policy depends on public health information.

A variety of CDC data systems provide the science base for identifying health problems, designing interventions, and monitoring program performance (See Appendix D). These data systems face considerable challenges in addressing each of these three areas. For the most part, data systems that were designed to support scientific objectives are now becoming important for the monitoring of performance. Challenges in obtaining data to monitor performance under GPRA include the following:

1. As GPRA measures are refined over time, data systems to produce data with a frequency that corresponds to the periods during which performance is measured.
2. As health system changes, historical data series may not continue to produce needed data. For example, the move toward managed care may make medical information increasingly proprietary and impede access to data for research and statistical purposes. Similarly, changes in relationships among healthcare providers and laboratories may make public health surveillance based on case reports more difficult. At the same time, these changes present opportunities for new data-system partnerships.
3. Data systems will need to produce information of sufficient quality and precision to detect relatively small changes in performance indicators. This may require investments in larger sample sizes for surveys and new technologies for improving data quality. Continuing research will be required to establish the data systems and underlying evaluation approaches to assess causes (program interventions) and effects (outcomes) for performance monitoring.
4. Many national data systems are the source of GPRA measures for CDC and other health programs. These systems must be assessed and upgraded to remain current with the public health infrastructure. Resources to ensure the maintenance and strengthening of these data systems are included in the FY 2005 CDC budget request and need to be continued.
5. Because many CDC and HHS programs are implemented at state and local levels, it will be increasingly important to obtain reliable, systematic data at these levels for monitoring of program implementation, performance, and outcomes.

Ascertaining what information is needed and how to collect it is a complex issue. Information for action must be useful to public health programs at local, state, and national levels. CDC and partners use at least seven categories of information to understand and address disease, injury, and disability using the public health model. These categories of information include:

- Reports of health events affecting individuals.
- Vital statistics on the entire population.
- Information on the health status, risk behaviors, and experiences of populations.
- Information on potential exposures to environmental agents.
- Information on public health programs.
- Information useful to public health but obtained by organizations not directly involved in public health practice.
- Information on the healthcare system and its impact on health.

Reports of health events

Reports of cases of diseases of public health importance form the basis for many CDC programs. The National Notifiable Disease Surveillance System (NNDSS) seeks reports on all cases of >40 conditions in the United States. To minimize the burden placed on those who report the data, CDC limits the amount of information collected for each case. NNDSS data are used to monitor disease trends, evaluate public health programs, and identify unusual occurrences of conditions that may require further epidemiologic investigation at the local level.

For some public health purposes, effective action requires additional details on each case. Supplemental data collection systems have therefore been developed for some of the diseases reported to NNDSS. These systems may be less comprehensive in terms of populations represented but provide more detailed information on characteristics of the occurrence of disease. For example, cases of hepatitis are reported weekly to NNDSS for publication in the *Morbidity and Mortality Weekly Report (MMWR)*. In addition, the Viral Hepatitis Surveillance Project collects data on risk factors for different types of viral hepatitis in selected geographic areas. These data have been used to document the importance of behaviors associated with sexual activity and drug use as risk factors for transmitting hepatitis B virus and to target education and vaccination programs.

Control of some conditions requires more detailed information than can be obtained feasibility from a large group of clinicians or institutions. Networks of selected healthcare providers have therefore been organized to meet these targeted information needs. For example, CDC's Sentinel Event Notification System for Occupational Risks (SENSOR) targets groups of healthcare providers as a component of a comprehensive approach for obtaining data on which to base efforts to prevent workplace-related morbidity. The National Nosocomial Infections Surveillance System (NNIS) receives reports from a selected group of hospitals on the incidence and characteristics of hospital-acquired infections. Data from this system have been instrumental in alerting health authorities to the emergence of antibiotic-resistant strains of bacteria, which in turn has led to the development of recommendations for the appropriate use of antibiotics.

Vital statistics

Vital records (e.g., births, deaths) are the primary source of some of the most fundamental public health information. Data on teen births, access to prenatal care, maternal risk factors, infant mortality, causes of death, and life expectancy are among the staples of public health information provided by vital statistics. Vital statistics are often the most complete and continuous information

available to public health officials at the national, state, and local levels; the timely availability of these data is critically important.

In the United States, the legal authority for vital registration rests with the states and territories. CDC's National Center for Health Statistics (NCHS) produces national vital statistics by collecting data from the vital records of the states. NCHS works with the states to ensure a uniform national data base through the promotion of standard data collection forms and data preparation and processing procedures and also provides partial financial support for state systems.

Health status, risk factors, and experiences of populations

Since the determinants of many health problems are behavioral, environmental, or genetic, health agencies need information that is not readily available from medical records on the prevalence of various types of behavior and on access to care. Thus, regularly conducted surveys of the general population are needed for public health. These surveys range from large-scale assessments of the general population to assessments targeted at high-risk (i.e., particularly vulnerable) populations. This need is particularly acute at the state and local levels. Surveys provide information on: 1) baseline health status, 2) morbidity, 3) prevalence of behavioral risk factors, 4) use of healthcare services and identification of underserved populations, and 5) potential for exposure to toxic agents. Information generated from the surveys is used in developing prevention and control programs and in ensuring adequate delivery of health services.

Potential exposure to environmental agents

Information on exposures to environmental agents can be used in evaluating the risks to health from noninfectious diseases, injuries, and certain infectious diseases. For example, measurement of airborne particulates is useful in assessing risks related to pulmonary disorders such as asthma and lung cancer. Information on vectors that may carry agents of infectious disease is important in evaluating the risk for acquiring such infections.

Program information

Data needed to operate public health programs include the number of clients served and the costs of services rendered. These data are useful to public health officials in assessing the effectiveness of public health programs, comparing programs, documenting the need for continuing a particular program, and maintaining accountability for tax dollars spent.

Information from other organizations

Data useful for public health are currently or potentially available from organizations whose functions may not be related to those of CDC and state and local health departments. Data from the Bureau of the Census, for example, are needed for both the reliable computation of rates and the proper adjustment of rates for comparison over time or in different geographic areas. The Environmental Protection Agency (EPA) compiles environmental air-monitoring data to assess compliance with standards for air pollutants established by the Clean Air Act. Data collected through this system are used by public health officials for hazard alerts when pollutants exceed federal standards and in studies of the effects of air pollutants on morbidity associated with respiratory diseases. The Occupational Safety and Health Administration (OSHA) and the Bureau of Labor Statistics compile data on the occurrence of work-related injuries and illnesses and exposure to hazards in the workplace, which can be used for surveillance and research. The Department of

Transportation operates the Fatal Accident Reporting System, used in public health to assess risk factors for motor-vehicle-related injuries and deaths. Crime statistics gathered by the Federal Bureau of Investigation (FBI) assist in evaluating the public health impact of intentional injuries, and the Consumer Product Safety Commission collects data on injuries related to consumer products.

Information on the healthcare system

Information is also needed on the healthcare system and the health impact resulting from changes in the system. CDC provides a great deal of information to monitor the capacity of the healthcare system, utilization of the system, and access to health insurance and services by the American people. These data include: inventories of healthcare providers; patterns of utilization of health services such as hospitalization rates and uptake of new technologies; and access to healthcare and barriers (both financial and non-financial) to access.

II. Linkages with Budget, Cost Accounting, Information Technology Planning, Capital Planning, and Program Evaluation

Clinger-Cohen Act

CDC has implemented the requirements under the Clinger-Cohen Act of 1996 (CCA) for information technology (IT) capital investment planning, monitoring, and performance measurement. The Information Technology Investment Review Board (ITIRB) process has been established and was released CDC-wide on January 5, 1999, via the CDC Intranet. CCA compliance became a component of the CDC budget planning process for the FY 2001 budget. Major IT investments associated with budget initiatives required the development of a Capital Asset Plan and Business Case (Exhibit 300) as part of the submission.

Also in compliance with CCA, CDC has developed several components of the agency's information technology architecture, such as certain health data standards, networking and telecommunications architecture, information security, and the majority of the agency's administrative procedures. More extensive work on other core business processes, information flows, process and data models is ongoing.

In addition to efforts in the implementation of CCA, CDC has a well-integrated GPRA and IRM Strategic Plan that aligns IT products and services with CDC's ever-changing mission needs and directions. The IRM strategic goals, strategies and performance measures support the mission, mission goals, and CDC's GPRA performance plan.

III. Linkages with the President's Management Agenda

CDC has been actively pursuing goals and improvements related to the President's Management Agenda (PMA) for some time. For example, from 1997 to 2001, CDC decreased its proportion of administrative positions by 6%. CDC has historically focused on keeping the agency market-based and efficient by having about 6,000 service contractor staff engaged to conduct commercially-oriented responsibilities. In 2000, CDC also established its Fiscal Management Excellence Initiative, which has further enhanced its efforts to improve fiscal performance. In FY 2002, CDC had a less than 1% variance between allotted agency FTE levels and actual FTE usage, thus, effectively integrating strategic workforce planning with budget and program execution. CDC is also organized to address effectively and lead PMA issues in several ways. For example, CDC has established a

Management Council to help concentrate management attention on the PMA, and has appointed a full-time, executive leader to coordinate activities and articulate the interdependence among the initiatives.

Strategic Management of Human Capital

Strategic Management of Human Capital is a priority for CDC, which has established a number of specific and measurable goals to address Strategic Management of Human Capital issues.

Specifically, CDC's goals are to

- Reduce the number of organizational layers to four.
- Implement the CDC Business Services Consolidation Plan.
- Consolidate all budget execution functions.
- Increase supervisory ratios.

CDC eliminated all fifth level organizational units by December 31, 2003. In addition, CDC will continue to strengthen supervisory ratios as an indicator of delayering and restructuring effectiveness. CDC is continuing to work to address further workforce restructuring issues. For example, CDC has implemented a variety of strategies to improve efficiencies and transition staff from administrative and management positions to frontline mission-direct positions.

Examples of these CDC-wide efforts, include the following:

- Restructuring administrative activities to reduce by 15% the number of staff working in these functions.
- The widespread use of Team Leaders to help CDC gain maximum use of personnel and resources.
- Consolidating Information Technology (IT) infrastructure activities under the CDC Chief Information Officer and reducing by 15% the number of staff working in this area.
- Consolidating travel, professional training, and graphics to realize efficiencies.

Increased Competitive Sourcing

CDC has successfully achieved the Competitive Sourcing goals established in the PMA. This includes refining the FAIR Act inventory each year to reflect the differentiation between commercial and inherently governmental work conducted at CDC. In addition, CDC developed competitive sourcing plans for FY 2002 and FY 2003, which set forth the strategy to conduct studies or directly convert 5% in FY 2002, and 10% in FY 2003, of the commercial-type positions. CDC fully achieved the FY 2002 and FY 2003 goals. For FY 2003, CDC is on track to conduct public-private competitions for about 340 FTEs listed in its FAIR Act inventory as performing commercial work for FY 2004.

Improved Financial Management

CDC continues to make great strides in this area. For the past 6 years, CDC has received or contributed to an unqualified opinion on the financial statements performed by independent auditors. A new HHS-wide financial management system, the Unified Financial Management System (UFMS), will be implemented to replace five legacy accounting systems currently used across CDC. The current accounting system is based on software that is 17 years old and requires substantial, labor-intensive effort. CDC and HHS kicked off the implementation of the CDC segment of the UFMS development in October 2002. CDC completed quarterly financial statements in FY 2003. CDC will continue to improve its financial management operations by

following the guidelines set down by PricewaterhouseCoopers and GAO in their November 2000 reports by following CDC's Financial Management Excellence Initiative. For example, CDC has implemented a Financial Management Certificate Program to build fiscal excellence. In addition, CDC has implemented a new method to allocate indirect costs in FY 2002 that directly links users of services with the cost of providing those services.

Expanded E-Government

CDC continues to be a leader in E-Gov initiatives by

- Contributing to government-wide E-Gov initiatives (i.e., e-Vitals, consolidated health informatics [CHI], e-Travel, e-Grants, Geospatial Information One Stop, SAFECOM, and GOVBENEFITS) with an initial 16 CDC programs represented covering \$4.4 billion.
- Aligning with E-Gov directions in other ways such as implementing technologies with external partners to reduce data exchange burdens by adopting industry standards, such as ebXML.
- Contributing to HHS initiatives (i.e., the HHS Enterprise IT Strategic Plan, UFMS, Enterprise Human Resources and Payroll [EHRP], HHS enterprise information security, and others).
- Refining and maturing its IT capital planning process that now identifies 230 IT investments and 16 capital investments for FY 2003 all of which received a score of 4 out of 5 by OMB. Capital planning analyses have improved rigor in enterprise architecture, security, and fiscal discipline.
- Complying with the Government Paperwork Elimination Act (GPEA) ahead of the October 2003 deadline by making data collections and disseminations enabled electronically.
- Continuing to enhance the CDC Web presence as the authoritative trusted source of public health information for healthcare providers, public health officials, the media, and the public. Over 9 million visitors per month make CDC's website one of the most frequently visited government websites. SARS concerns resulted in over 17 million different visitors in April 2003. Key improvements underway to make the site more citizen-centric by making improvements in use, navigation, searching, interactivity, personalization, and enriching and expanding content in a consumer-oriented presentation.

Enhanced Budget and Performance Integration

CDC continues to work diligently in this area on several fronts. This work has spanned the organization, and has included staff from planning and budget offices, the procurement and grants office, and virtually every program across CDC. Accomplishments this year are listed below.

Annual Plan/Report Submission

CDC's annual performance plan and report has been revised substantially. The plan has been revised in accordance with detailed guidance from HHS. Significant changes and improvements to the plan included:

- Inclusion of an executive summary that reinforces the link between the performance plan and the budget request while highlighting past, present, and future performance.
- Inclusion of an introduction to the performance plan and report summarizing performance measures, including number of outcome measures and a "Summary of Measures" chart for FY 2000–2005 performance measures.
- Revision of program analyses to delineate more clearly measures with accomplishments.
- Provision of a more meaningful referencing system wherein performance measures are related to the budget request, *Healthy People 2010*, HHS Strategic Plan Goals, and the President's Management Agenda, and inclusion of program highlights supporting these activities.

- Inclusion of OMB recommendations for CDC programs reviewed for the FY 2004 and FY 2005 PART assessments.
- Improvement in the quality and comprehensiveness of appendices. These improvements included a more coherent discussion of our partnership and coordination activities, as well as enhancements to our data verification and validation section of the plan.
- Inclusion of detailed full cost information providing enhanced budget information for performance measurements.

Program Outcomes

The FY 2005 Performance Plan maintains 109 measures, 47 of which are outcome measures. The revised FY 2004 Plan contains 46 outcome measures, a 19% increase in outcome measures over the FY 2003 submission. The FY 2003 Performance Report indicates that we achieved 81 of 98 (83%) reported performance measures. CDC continues to revise performance information to focus on outcome-oriented goals and measures and to develop efficiency measures.

Program Effectiveness

In 2002, OMB identified the following five CDC programs to complete the FY 2004 PART process: Immunization 317 Program, National Breast and Cervical Cancer Early Detection Program, National Diabetes Control Program, Domestic HIV/AIDS Prevention Program, and Health Alert Network. Final ratings for the programs are

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| ● Immunization 317 Program | Adequate |
| ● National Breast and Cervical Cancer Early Detection Program | Results not demonstrated |
| ● National Diabetes Control Program | Results not demonstrated |
| ● Domestic HIV/AIDS Prevention Program | Results not demonstrated |
| ● Health Alert Network | Adequate |

The range of PART qualitative ratings are, in descending order, “Effective, Moderately Effective, Adequate, Results not Demonstrated, and Ineffective.” More than half of the federal programs reviewed were rated “Results not Demonstrated;” 14.5% are rated “Adequate” and only 6% are evaluated “Effective.”

CDC has developed milestones for each program to address specific weaknesses identified by OMB during the review process. More information about CDC’s progress toward meeting the milestones is found in CDC’s *FY 2005 Justification of Budget Estimates*. CDC will continue to address OMB’s recommendations. All programs identified as “Results Not Demonstrated” had deficiencies related to long-term outcomes. These programs are planning and, or, are currently conducting activities to make long-term goals more outcome-oriented and ambitious with new baselines and targets.

In 2003, OMB selected two additional programs for the FY 2005 PART assessments: the State and Local Terrorism Preparedness Program and the Agency for Toxic Substances and Disease Registry. The two new programs received ratings of “Results not demonstrate” and “Adequate,” respectively. Each program has developed and is implementing strategies to demonstrate to OMB improved program performance and effectiveness. In 2004, CDC has begun preparing potential programs for the FY 2006 OMB reviews by conducting training and mock reviews of selected programs.